

## **REMARKS**

Reconsideration of the application, as amended, is respectfully requested.

### **I. STATUS OF THE CLAIMS**

Claims 1-5, 7, 9-21, 24 and 27 are pending in this application. Claims 15 and 27 have been amended to more particularly point out and distinctly claim that which applicants regard as their invention. In particular, Claim 15 has been amended to further clarify that the cleaning solution includes an alkaline solution consisting essentially of an alkaline chloride solution.

Support for the above amendments may be found throughout the specification as originally filed. No new matter has been added by virtue of this amendment.

### **II. 35 U.S.C. 112, SECOND PARAGRAPH REJECTIONS**

Claim 27 has been rejected under 35 U.S.C. 112, second paragraph as being indefinite on the grounds that the term "the acid solution" lacks support from claim 15 from which it depends.

In response, claim 27 has been amended herewith to recite that the cleaning solution further comprises "an acid solution in an amount of about 0.0001 to about 10 wt.% of the cleaning solution".

In view of the above action taken, it is believed that the rejection to claim 27 has been overcome and thus removal of the above rejection to this claim is requested.

### **III. 35 U.S.C. 103(a) REJECTIONS**

(i) Claims 1-5, 7, 9, 12 and 14 have been rejected under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent No. 4,670,186 to Quinlan ("the Quinlan patent").

(ii) Claims 1-2, 4, 7, 9 and 12-14 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,032,466 to Otrhalek et al. ("the Otrhalek patent").

(iii) Claims 3 and 5 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Otrhalek as applied to the above claims, and further in view of Quinlan.

(iv) Claims 1-5, 7 and 9-11 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,817,252 to Hu et al. ("the Hu patent").

(v) Claims 15-18 and 24 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,849,467 to Sato et al. ("the Sato patent").

(vi) Claims 15-18 and 24 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Sato in view of U.S. Patent Application Publication No. US2004/0142835 to Takashima ("the Takashima publication").

(vii) Claims 1-5, 7, 9-11 and 19-21 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Sato; or Sato in view of Takashima as applied to claims 15-18 and 24 above, and further in view of U.S. Patent No. 6,379,875 to Chu ("the Chu patent").

It is initially noted that the Takashima publication cited in the instant Office Action, does not qualify as prior art with respect to any of the pending claims, including those claims rejected above. Namely, the effective filing date of Takashima for 35 U.S.C. 102(e) purposes is after the foreign priority date claimed under 35 U.S.C. 119 by the present application to Korean Patent Application No. 10-2003-0035345. Specifically, the effective 102(e) filing date for Takashima is November 6, 2003, whereas the priority date claimed by the present application is June 2, 2003. (Korean Patent Application No. 10-2003-0035345). Thus, Takashima is clearly not prior art with respect to any of the pending claims of the present application, including those claims rejected above.

In this regard, pursuant to **MPEP 201.15**, an English translation of the certified copy of the above Korean priority application, together with a statement that the translation of the

certified copy of this application is accurate will be forwarded with or shortly after the filing of this Amendment.

Therefore, for the reasons set forth above, Takashima does not constitute prior art and thus cannot be relied upon to support the current claim rejections under 35 U.S.C. 103(a). Accordingly the claim rejections under 35 U.S.C. 103(a) are legally deficient on their face and consequently must be withdrawn.

**A. References fail to teach or suggest all of the limitations of Claim 1**

Next, with regard to the remaining cited references of Quinlan, Otrhalek, Hu, Sato and Chu, these references alone or in combination each fail to describe all of the specific features recited in the cleaning solution of claim 1. For example, the above cited references each at the very least fail to describe a cleaning solution which includes the specific surfactant, i.e.  $C_{12}H_{25}O(CH_2CH_2O)_JH$ , wherein J is an integer ranging from 5 to 15, as recited in claim 1 of the present invention. As discussed in the present specification, a cleaning solution which includes the above claimed surfactant and the claimed corrosion inhibitor as essentially recited in claim 1 provides beneficial cleaning properties over conventional cleaning solutions. (See, e.g., pages 10-12 of the present specification).

Moreover, Quinlan, Otrhalek, Hu, Sato and Chu, each fail to provide sufficient motivation to one skilled in the art to provide the above specific surfactant in a cleaning solution as recited in claim 1. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so. The cited art must suggest the desirability of the claimed invention. (See 2143.01 of the MPEP) However, the Quinlan, Otrhalek, Hu, Sato and Chu references each fail to hint or suggest the desirability of providing the specific surfactant, i.e.  $C_{12}H_{25}O(CH_2CH_2O)_JH$ , wherein J is an integer ranging from 5 to 15, in a cleaning solution as recited in claim 1. Rather, Quinlan, Otrhalek, Hu, Sato and Chu each provide either a very broad range or a laundry list of possible surfactants which may be used with its compositions without specifically mentioning the surfactant recited in the cleaning solution of claim 1 or

suggesting the desirability of using the claimed surfactant. A discussion regarding the above cited art will be discussed in further detail below.

For example, although Quinlan describes the use of a non-ionic surfactant such as dodecyl alcohol, condensed with 20 mols of ethylene oxide, Quinlan stills fails to describe a cleaning solution which includes a surfactant with the formula of  $C_{12}H_{25}O(CH_2CH_2O)_JH$ , wherein J is an integer ranging from 5 to 15. The above surfactant of Quinlan clearly does not fall within the claimed surfactant of claim 1. Moreover, Quinlan fails to provide sufficient motivation to one skilled in the art to provide the claimed surfactant in its composition because at the very least, Quinlan sets forth a voluminous list of possible surfactants which may be used without hinting or suggesting the desirability of using the specific surfactant recited in claim 1. (See Columns 2-5 of Quinlan).

Next, Otrahlek mentions that its cleaning solutions may include ethoxylated monohydric alcohol surfactants. However, the fact that a species such as the surfactant recited in claim 1 could possibly fall within a genus such as ethoxylated monohydric alcohol surfactants mentioned in Otrahlek by itself is not sufficient for establishing a prima facie case of obviousness. (See MPEP 2144.08, Section II). Rather, it must be shown that the cited art provides sufficient motivation or suggests the desirability of using the claimed species. (See MPEP 2144.08, Section IIA ). Otrahlek fails to provide sufficient motivation to one skilled in the art to provide the claimed surfactant in its composition for at least the reasons set forth below. Rather, Otrahlek describes that a broad range of ethoxylated monohydric alcohol surfactants may be included in its composition but Otrahlek fails to describe a cleaning solution which includes the specific surfactant of  $C_{12}H_{25}O(CH_2CH_2O)_JH$ , wherein J is an integer ranging from 5 to 15, as recited in claim 1. Additionally, Otrahlek also sets forth a laundry list of several different surfactants other than ethoxylated monohydric alcohol surfactants which may be used with its composition. In sum, Otrahlek describes that many different surfactants may be included in its compositions, without hinting or suggesting the desirability of using the specific surfactant recited in claim 1 as part of its compositions. (See Cols. 4-6 of Otrahlek).

Moreover, the technological field of the invention described in the Hu reference that is related to deicing and anti-icing compositions for aircrafts is completely different from that of

the present invention which is related to a cleaning solution such, as for example, a cleaning agent used in the process of forming a semiconductor device. Therefore, the Hu reference cannot be used as a reference to reject this application.

Furthermore, although Sato mentions that certain non-ionic surface active agents may be used with its cleaning solution, none of these surfactants fall within the surfactant recited in claim 1. (See Col. 5, lines 41-48 of Sato). Moreover, Sato fails to hint or suggest at the desirability of using the specific surfactant as part of a cleaning solution as essentially recited in claim 1.

Additionally, Chu broadly states that several different types of surfactants may be used with its compositions, including fatty acids or fatty alcohol ethoxylates with saturated or unsaturated hydrocarbon chains having 8 to 24 carbon atoms and a degree of ethoxylation of 2 to 20. (See col. 5, lines 4-19 of Chu). However, the above fatty acids or fatty alcohol ethoxylates described in Chu are a very broad genus of surfactants and Chu fails to hint or suggest at the desirability of using the specific surfactant recited in the cleaning solution of claim 1.

In sum, each of the Quinlan, Otrhalek, Hu, Sato and Chu each fail to describe the specific surfactant  $C_{12}H_{25}O(CH_2CH_2O)_JH$ , wherein J is an integer ranging from 5 to 15, as part of a cleaning solution as essentially recited in claim 1. Instead, each of the above cited references describes either a very broad genus of surfactants and/or laundry list of possible surfactants which may be used in association with their compositions, without providing any hint or suggestion at the desirability of using the specific surfactant recited in claim 1.

Therefore, for at least the reasons set forth above, Quinlan, Otrhalek, Hu, Sato and Chu each fail to teach or suggest all of the features recited in claim 1. Withdrawal of the above rejections to claim 1 is thus respectfully requested. As claims 2-5, 7 and 9-14 depend from and incorporate all of the limitations of claim 1, withdrawal of the rejection to these dependent claims is also respectfully requested.

**B. References fails to teach or suggest all of the limitations of claim 15**

Moreover, the Quinlan, Otrhalek, Hu, Sato and Chu, references alone or in combination each fail to teach or suggest all of the features recited in claims 15.

As mentioned above, claim 15 has been amended to further clarify that the cleaning solution includes an alkaline solution consisting essentially of an alkaline chloride solution.

In particular, Quinlan, Otrhalek, Hu, Sato and Chu at the very least each fail to teach or suggest a cleaning solution including a corrosion inhibitor and an alkaline solution consisting essentially of an alkaline chloride solution, as essentially recited in claim 15.

In contrast, Quinlan, Otrhalek, Hu, Sato and Chu are each completely silent regarding a cleaning solution including a corrosion inhibitor and an alkaline solution consisting essentially of an alkaline chloride solution, as recited in claim 15. Sato mentions the use of tetramethylammonium hydroxide with its compositions (See Col. 8, line 8 of Sato) and Hu mentions the use of potassium hydroxide or sodium hydroxide with its compositions (See Col. 6, lines 4-5 of Hu). However, at the very least none of the above cited references in the instant Office Action teaches or suggests a cleaning solution which includes the specific alkaline solution in conjunction with a corrosion inhibitor as recited in claim 15.

Moreover, it would not have been obvious to one skilled in the art to provide a cleaning solution including the specific alkaline solution in conjunction with a corrosion inhibitor as recited in claim 15, due to the unpredictability of the chemical art (See MPEP 2164.03). Furthermore, with the voluminous list of possible alkaline solutions which may be used in cleaning solutions, and the failure of Quinlan, Otrhalek, Hu, Sato and Chu to provide any hint or suggestion as to the desirability of choosing the specific alkaline solution recited in claim 15, these references thus fail to provide sufficient motivation to one skilled in the art to modify any of these cited references to include the specific alkaline solution recited in claim 15.

Therefore, withdrawal of the above rejections to claim 15 is respectfully requested. As claims 16-21, 24 and 27 depend from and incorporate all of the limitations of claim 15, withdrawal of the rejection to these dependent claims is also respectfully requested.

**IV. CONCLUSION:**

For the foregoing reasons, the present application is believed to be in condition for allowance. The Examiner's early and favorable action is respectfully requested.

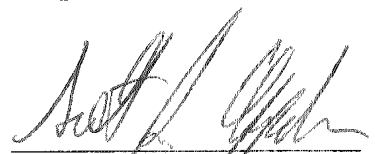
The Examiner is invited to contact the undersigned if he has any questions or comments in this matter.

Dated: \_\_\_\_\_

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Respectfully submitted,

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